THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
VOLUME VI: AIR (AP)

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ADMIN RECORD

A-SW-001288

ROCKY FLATS PLANT

4-I50-ENV-OPS-FO.32

REVISION 0

TREATED EFFLUENT DISCHARGE OPERABLE UNIT 1, BUILDING 891

APPROVED BY: for S.G. Hagen / S.G. Hagen / 2/25/94
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Quality Assurance Program Manager, EG&G Environmental Restoration Management — Print Name — Date

CONCURRENCE BY: / Jessie Roberson / 2-25-94
Director, Environmental Restoration Division, DOE, Rocky Flats Office — Print Name — Date

Environmental Protection Agency Approval Required: ☒ Yes ☐ No

Responsible Organization: Environmental Restoration Management Effective Date: 4/13/94 (June 3/31/94)

CONCURRENCE BY THE FOLLOWING DISCIPLINES IS DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Environmental Engineering and Technology
Environmental Operations Management
Geosciences
Remediation Project Management
Sample Management
Industrial Hygiene
Occupational Safety
Radiological Engineering
Surface Water Division

USE CATEGORY 3

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1. PURPOSE

This procedure describes the administrative and operations steps used at Rocky Flats Plant (RFP) for discharging treated effluent from the Building 891 Groundwater Treatment Facility for 881 Hillside, Operable Unit (OU) 1 to the South Interceptor Ditch.

2. SCOPE

This procedure applies to all discharges of treated effluent from the Building 891 Groundwater Treatment Facility to the South Interceptor Ditch used by Environmental Operations Management employees and subcontractors.

This procedure addresses the administrative controls of the treated effluent discharge from the Building 891 Groundwater Treatment Facility.

3. OVERVIEW

This procedure describes the steps for discharging treated effluent from the Building 891 Groundwater Treatment Facility. The facility consists of a groundwater recovery and storage system, an ultraviolet/hydrogen peroxide oxidation system, an ion exchange system with units for acid and caustic regeneration of resin, a spent regenerant neutralization system, and a treated effluent storage and discharge system.

This procedure was established to ensure that treated effluent from the Building 891 Groundwater Treatment Facility meets the applicable or relevant and appropriate requirements (ARARs) in the Interim Measures/Interim Remedial Action Plan and Decision Document, 881 Hillside Area, Operable Unit 1, for discharge to the South Interceptor Ditch. The OU 1 Building 891 ARARs, Appendix 1, are included.

4. RESPONSIBILITIES

4.1 Operations Manager

Verifies that the analytical results are in compliance with the OU 1 Building 891 ARARs in Appendix 1.

4.2 Operator

Verifies the valve positions.

Records the discharge information on the daily logs.

Verifies and logs all tank levels.

4.3 Project Manager

Verifies that the analytical results are in compliance with the OU 1 Building 891 ARARs in Appendix 1.

Notifies applicable agencies of the analytical results, and of the intent to discharge.

Instructs the Operator when to discharge an effluent tank.

Locks and unlocks the valves, verifies the valve positions, and records actions on the Treated Effluent Discharge Checklist Operable Unit 1, Building 891, Appendix 2.

4.4 Shift Foreman

Verifies the valve positions.

5. LIMITATIONS AND PRECAUTIONS

- The steps in this procedure shall be followed to ensure that the treated effluent from the Building 891 Groundwater Treatment Facility meets the requirements established for RFP by the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Colorado Department of Health (CDH).

- The effluent outfall shall be visually monitored to verify that the discharge flow does not result in soil erosion or overflow the bounds of the South Interceptor Ditch to minimize the potential for damage to vegetation or soil erosion.

6. PREREQUISITE ACTIONS

6.1 Planning and Coordination

Project Manager

[1] Ensure that all personnel involved in the field implementation of this procedure are trained in the site-specific health and safety plan.

[2] Arrange for the collection and analysis of samples of the discharge from the following treated effluent storage tanks:

- T-205
- T-206
- T-207

Samples are collected and analyzed in accordance with the Sampling and Analysis Plan for Operation and Maintenance of the Interim Measures/Interim Remedial Action for the 881 Hillside Operable Unit No. 1 and 4-B35-ER-OPS-FO.13, Containerization, Preserving, Handling and Shipping of Samples.

[3] Maintain control of the keys to the locks installed on the following effluent valves:

- HVB-205
- HVB-206
- HVB-207

7. INSTRUCTIONS—ADMINISTRATIVE

NOTE *The following analytical results will come from an RFP approved laboratory.*

Project Manager

[1] Verify that the analytical results are in compliance with the OU 1 Building 891 ARARs in Appendix 1.

[2] Record the tank number and the sample number(s) for each tank on the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

Project Manager and Operations Manager

[3] Sign and date the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

Project Manager

[4] Notify the following of the analytical results, and the intent to discharge treated effluent:

- DOE
- CDH
- EPA
- OU 1 Manager
- Surface Water Division Manager
- RFP Shift Supervisor

[5] **WHEN** the notifications have been sent,
THEN sign and date the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

[6] Authorize the discharge of the treated effluent tank.

8. INSTRUCTIONS—TREATED EFFLUENT OPERATION

8.1 Valve Position Verification

Project Manager, Shift Foreman, and Operator

[1] Verify that all system valves on the Effluent Storage System Valve Position, Appendix 3 are CLOSED before discharge of treated effluent from Building 891.

8.2 Discharge from T-205

Project Manager

[1] Unlock valve HVB-205.

Operator

[2] Open valve HVB-205 to approximately 25% of the fully OPEN position.

Project Manager, Shift Foreman, and Operator

[3] Record the time and date, and sign the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

Operator

[4] Record the following for each discharge on the Daily Log, and on the Building 891 Tank Level/Volume Log, Appendix 4:

- Time
- Date
- Tank number

[5] Verify and log all tank levels on the Daily Log, and on the Building 891 Tank Level/Volume Log at least once every 2 hr during the discharge of treated effluent.

[6] **WHEN** the level readout for T-205 on the Allen Bradley screen indicates that the tank is empty
OR discharging is stopped for any reason,
THEN close valve HVB-205.

[7] **IF** discharging is stopped,
THEN log the basis for determination.

8.2 Discharge from T-205 (continued)

Project Manager

[8] Lock valve HVB-205.

[9] Notify the RFP Shift Supervisor and the Surface Water Division Manager of the termination of discharge and of the volume of water discharged.

Project Manager, Shift Foreman, and Operator

[10] Record the time and date, and sign the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

8.3 Discharge from T-206

Project Manager

[1] Unlock valve HVB-206.

Operator

[2] Open valve HVB-206 to approximately 25% of the fully OPEN position.

Project Manager, Shift Foreman, and Operator

[3] Record the time and date, and sign the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

Operator

[4] Record the following for each discharge on the Daily Log, and on the Building 891 Tank Level/Volume Log:

- Time
- Date
- Tank number

[5] Verify and log all tank levels on the Daily Log, and on the Building 891 Tank Level/Volume Log at least once every 2 hr during the discharge of treated effluent.

[6] **WHEN** the level readout for T-206 on the Allen Bradley screen indicates that the tank is empty,
OR discharging is stopped for any reason,
THEN close valve HVB-206.

8.3 Discharge from T-206 (continued)

Operator (continued)

[7] **IF** discharging is stopped,
THEN log the basis for determination.

Project Manager

[8] Lock valve HVB-206.

[9] Notify the RFP Shift Supervisor and the Surface Water Division Manager of the termination of discharge and of the volume of water discharged.

Project Manager, Shift Foreman, and Operator

[10] Record the time and date, and sign the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

8.4 Discharge from T-207

Project Manager

[1] Unlock valve HVB-207.

Operator

[2] Open isolation effluent valve HVD-207 on T-207.

[3] Open valve HVB-207 to approximately 25% of the fully OPEN position.

Project Manager, Shift Foreman, and Operator

[4] Record the time and date, and sign the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

Operator

[5] Record the following for each discharge on the Daily Log, and on the Building 891 Tank Level/Volume Log:

- Time
- Date
- Tank number

8.4 Discharge from T-207 (continued)

Operator (continued)

[6] Verify and log all tank levels on the Daily Log, and on the Building 891 Tank Level/Volume Log at least once every 2 hr during the discharge of treated effluent.

[7] **WHEN** the level readout for T-207 on Allen Bradley screen indicates that the tank is empty,
OR discharging is stopped for any reason,
THEN close valve HVB-207.

[8] **IF** discharging is stopped,
THEN log the basis for determination.

Project Manager

[9] Lock valve HVB-207.

[10] Notify the RFP Shift Supervisor and the Surface Water Division of the termination of discharge and of the volume of water discharged.

Project Manager, Shift Foreman, and Operator

[11] Record the time and date, and sign the Treated Effluent Discharge Checklist Operable Unit 1, Building 891.

Operator

[12] Close effluent isolation valve HVD-207 on T-207.

9. RECORDS

Management of all records is consistent with 1-77000-RM-001, Records Management Guidance for Records Sources.

The checklists and logs generated as a result of this procedure are considered quality records. These records are managed in accordance with 2-G18-ER-ADM-17.01, Quality Assurance Records Management.

9. RECORDS (continued)

These records are part of the Administrative Record (AR). These ARs are also managed in accordance with 3-21000-ADM-17.02, Administrative Records Screening and Processing in addition to 2-G18-ER-ADM-17.01.

There are no nonquality records generated by this procedure.

Project Manager

[1] Submit the records listed below for management in accordance with 3-21000-ADM-17.02, and 2-G18-ER-ADM-17.01:

- Treated Effluent Discharge Checklist Operable Unit 1, Building 891
- Building 891 Tank Level/Volume Log
- Daily Log

10. REFERENCES

Interim Measures/Interim Remedial Action Plan and Decision Document, 881 Hillside Area, Operable Unit 1, 1990

Sampling and Analysis Plan for Operation and Maintenance of the Interim Measures/Interim Remedial Action for the 881 Hillside Operable Unit No. 1, 1993

1-77000-RM-001, Records Management Guidance for Records Sources

2-G18-ER-ADM-17.01, Quality Assurance Records Management (until this procedure is issued, use 3-21000-ADM-17.01)

3-21000-ADM-17.02, Administrative Records Screening and Processing

4-B35-ER-OPS-FO.13, Containerization, Preserving, Handling and Shipping of Samples (until this procedure is issued, use 5-21000-OPS-FO.13)

APPENDIX 1
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OU 1 BUILDING 891 ARARs

ORGANICS	UNITS	TREATMENT REQUIREMENTS
Methylene Chloride	ug/l	5
Acetone	ug/l	50
Carbon Disulfide	ug/l	5
1,1 Dichloroethene	ug/l	7
1,1 Dichloroethane	ug/l	5
1,2 Dichloroethane	ug/l	5
1,1,1 Trichlorethane	ug/l	200
Carbon Tetrachloride	ug/l	5
Trichloroethene	ug/l	5
1,1,2 Trichloroethane	ug/l	5
Tetrachloroethene	ug/l	5
Toluene	ug/l	2000

METALS	UNITS	TREATMENT REQUIREMENTS
Aluminum	mg/l	5
Antimony	mg/l	.06
Arsenic	mg/l	.05
Barium	mg/l	1.0
Beryllium	mg/l	0.1
Cadmium	mg/l	0.01
Cesium	mg/l	NS
Chromium	mg/l	0.05
Copper	mg/l	0.2
Iron	mg/l	0.3
Lead	mg/l	0.05
Lithium	mg/l	2.5
Manganese	mg/l	0.05
Mercury	mg/l	0.002
Molybdenum	mg/l	0.1
Nickel	mg/l	0.2
Selenium	mg/l	0.01
Silver	mg/l	0.05
Strontium	mg/l	NS
Thallium	mg/l	0.01
Vanadium	mg/l	0.1
Zinc	mg/l	2.0

APPENDIX 1
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MAJOR IONS	UNITS	TREATMENT REQUIREMENTS
Calcium	mg/l	NS
Magnesium	mg/l	NS
Potassium	mg/l	NS
Sodium	mg/l	NS
Total Dissolved Solids	mg/l	400
Chloride	mg/l	250
Nitrite and Nitrate	mg/l	10
Sulfate	mg/l	250
Bicarbonate as ($CaCO_3$)	mg/l	NS

RADIONUCLIDES	UNITS	TREATMENT REQUIREMENTS
Gross Alpha	pCi/l	15
Gross Beta	pCi/l	50
Uranium (Total)	pCi/l	40
Strontium (89, 90)	pCi/l	8
Plutonium (239, 240)	pCi/l	15
Americium (241)	pCi/l	4
Tritium	pCi/l	20,000

NS No standard.

APPENDIX 2
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TREATED EFFLUENT DISCHARGE CHECKLIST
OPERABLE UNIT 1, BUILDING 891

TREATED EFFLUENT DISCHARGE CHECKLIST
OPERABLE UNIT 1, BUILDING 891

Form FO.32A
Rev 1
Sheet 1 of 2

EG&G review of analytical results for treated effluent verified against ARARs (see Appendix 1 of 4-I50-ENV-OPS-FO.32) in the Interim Measures/Interim Remedial Action Plan and Decision Document, 881 Hillside Area, Operable Unit 1.

Tank Number:	Sample Number(s):

Acceptable for discharge_____ Date _____
[1]Signature

Approved for discharge_____ Date _____
[1]Signature

Notifications to DOE, EPA, CDH, the Surface Water Division Manager, the OU 1 Manager, and the RFP Shift Supervisor completed _____ Date _____
[1]Signature

[1]Signatures must be EG&G Environmental Operations Management personnel only.

Action	Responsible Individual	Time	Date	Initials
Valve Position Verification All effluent storage system valves (in Appendix 3 of 4-I50-ENV-OPS-FO.32) are closed.				
	Operator			
	Shift Foreman			
	Project Manager			
Effluent Tank No. T-205 discharge Discharge made ☐ Yes ☐ No				
HVB-205 is unlocked and opened.				
	Operator			
	Shift Foreman			
	Project Manager			
HVB-205 is closed and locked.				
	Operator			
	Shift Foreman			
	Project Manager			

APPENDIX 2
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TREATED EFFLUENT DISCHARGE CHECKLIST
OPERABLE UNIT 1, BUILDING 891

Form FO.32A
Rev 1
Sheet 2 of 2

EG&G review of analytical results for treated effluent verified against ARARs (see Appendix 1 of 4-I50-ENV-OPS-FO.32) in the Interim Measures/Interim Remedial Action Plan and Decision Document, 881 Hillside Area, Operable Unit 1.

Tank Number:	Sample Number(s):			
Action	**Responsible Individual**	**Time**	**Date**	**Initials**
Effluent Tank No. T-206 discharge Discharge made ☐ Yes ☐ No				
HVB-206 is unlocked and opened.				
	Operator			
	Shift Foreman			
	Project Manager			
HVB-206 is closed and locked.				
	Operator			
	Shift Foreman			
	Project Manager			
Effluent Tank No. T-207 discharge Discharge made ☐ Yes ☐ No				
HVB-207 is unlocked and opened.				
	Operator			
	Shift Foreman			
	Project Manager			
HVB-207 is closed and locked.				
	Operator			
	Shift Foreman			
	Project Manager			
HVD-207 is closed.				
	Operator			
	Shift Foreman			
	Project Manager			

Comments: _____

APPENDIX 3
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EFFLUENT STORAGE SYSTEM VALVE POSITION

Function	HVB 205	HVB 206	HVB 207	HVC 205	HVC 206	HVC 207	HVD 207
DISCHARGE							
T-205	O	C	C	C	C	C	C
T-206	C	O	C	C	C	C	C
T-207	C	C	O	C	C	C	O

APPENDIX 4
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BUILDING 891 TANK LEVEL/VOLUME LOG

Form FO.32B Rev. 0

BUILDING 891 TANK LEVEL/VOLUME LOG

DATE:_____	START LEVEL	ENDING LEVEL	COMMENTS
T-201 INFLUENT STORAGE			
T-202 INFLUENT STORAGE			
T-203 INFLUENT STORAGE			
T-204 INFLUENT			
T-205 EFFLUENT STORAGE (1 FT ≈ 10,000 GAL)			
T-206 EFFLUENT STORAGE (1 FT ≈ 10,000 GAL)			
T-207 EFFLUENT STORAGE (1 FT ≈ 10,000 GAL)			
T-210 NEUTRALIZATION			
FRENCH DRAIN			

SYSTEM	GALLONS PROCESSED	COMMENTS
UV/PEROXIDE		
ION EXCHANGE		